September 18, 2023

Cushing Terrell

Ashley Chasez
Town of Parker Community Development
20120 E. Main Street
Parker, CO 80138

Re: Les Schwab Tire Center, Site Plan Review, Engineering Comment Responses

Dear Ashley,

We are providing the responses below in bold along with the Engineering comments provided by the City of Parker, dated August 18, 2023.

Traffic and Roadway Review Comments

1. Provide all Town standard construction notes. **BMP and Storm Infrastructure Notes added to C000 and C404, respectively.**
2. Provide intersection details for the two proposed access points and provide site specific details for all the associated ADA ramps. **Additional insets added to sheet C201 for detailed grading.**
3. All flows from the paved driving surface must be captured and conveyed by storm sewer to avoid potential for undermining of the pavement. Implement additional curb, gutter, inlets, and storm sewer as needed to accommodate this. **As part of the overall development, a concrete valley gutter has been added at the north drive. Rip rap extending from the concrete valley gutter to the existing inlet has also been added. The overall development plan is to add curb and be captured within storm inlets to the north.**
4. Show the existing access point across Sliceroo Drive from the northern access point proposed. Please note that these should approximately align to provide an increased level of safety for drivers as they leave the site. **Existing driveway lining up with proposed north drive entrance now shown on the plans.**
5. Provide and identify stop signs with MUTCD coding (R1-1) at both proposed access points. Additionally, identify street name signage on both stop signs as well. **Stop signs added to both access points.**
6. Please note while not required along private roadways, it is still highly recommended by Town Staff to evaluate sight triangles in accordance with Town Standard detail 24 to ensure safe ingress and egress from the proposed access points. **There are no structures within the sight triangles on either drive for the available length of road.**
7. Provide a minimum of 7-feet from the edge of any existing or proposed storm sewer infrastructure to any existing or proposed tree. **Trees have been revised to provide required clearance. Reference included landscaping plan.**

Stormwater Review Comments

1. Construction Plans must include Initial and Interim/Final CBMP sheets with all the required criteria and complete Town of Parker CBMP details. See Parker's Storm Drainage and Environmental Criteria Manual, Appendix D, CBMP Plan Check List starting on page 250. **Initial and Interim/Final erosion sheets and City**

of Parker CBMP details are included with the submittal, reference C010 and C011 for plans and C012 for details.

2. All storm sewer systems collecting drainage from the proposed drive aisles and parking areas must adhere to the standards and specifications outlined within Section 6.3.3 of the Town's SDECM, including the use of 18-inch minimum RCP and dedication of drainage easements. **Storm sewer revised from 15" to 18" RCP. Is a public easement required over this section of 18" storm sewer or can this be private?**
3. Provide a plan and profile for all proposed storm sewer infrastructure. **Profile of storm sewer added to sheet C201.**
4. Provide CDOT standard details for all proposed storm sewer infrastructure (inlets, manholes, storm sewer). Please note it would be Town Staff's preference for Type 13 inlets to be used in lieu of Type 16 inlets. **CDOT storm sewer detail added to sheet C404.**
5. Provide sections for all proposed swales. On the swale sections include dimensions, material type, 100-year water surface elevation, and freeboard above the 100-year water surface elevation. Additionally, for any swale adjacent to a structure provide anticipated finished floor elevation of the structure and identify the freeboard provided from the 100-year water surface elevation to the FFE. **Swale sections are now shown on sheet C201. A rip rap detail has been added to sheet C402 and the swale south of the existing inlet is native fill with topsoil and seeding as this is only capturing a drainage area of approximately 5,600 square feet. The northern drainage area draining through the rip rap is in place as a temporary outfall as curb and gutter will be installed adjacent to the north trash enclosure and directed to future storm sewer. The existing inlet this area drains to is set 2.75 feet below the proposed finish floor elevation and the invert of the 36" storm is 19.2 feet below the proposed finish floor elevation.**

<u>Drainage Report</u>

1. Please note that storm sewer should be implemented to capture and convey the on-site surface flows to the extent feasible to minimize potential safety concerns with icing. Specifically, please spread out the proposed Type 16 inlets to minimize the amount of surface flow across the pan and evaluate opportunities to minimize the extents of overland flow for the proposed OS basins. **As this is part of an overall development, the northern drainage area will be captured within storm sewer structures as part of future development. Any potential icing should be very minimal due to the site topography (proposed grades greater than 2% outside of ADA areas) and draining through the proposed rip rap.**
2. Please note that storm sewer should be provided in lieu of a swale for capturing and conveying the OS-1 flows to the existing system. Curb cut and swale combos are prone to undermining and failure of paved surfaces. **As this is part of an overall development, the northern drainage area will be captured within storm sewer structures as part of future development. Rip rap has been added to provide a more adequate erosion control measure for the temporary sheet flow.**
3. Provide references to support the use of Hydrologic Soil Group A for the hydrology calculations. Please note the original report references soils ranging from Type B to Type D and with the development of the site it is most likely that soils will act as Types C/D. **Soils group revised to Hydrologic Soul Group B per the USDA Web Soil Survey. Site soils consists of Newlin gravelly sandy loam, 0 to 8 percent slopes (NeE). This is now included in the appendices. The calculation table has been updated using the USDCM table as specified in the Parker Storm Drainage and Environmental Criteria Manual.**
4. Provide narrative on the ultimate receiving infrastructure for Sub Basin C. **Sub Basin C drains to the existing storm infrastructure within the adjacent residential subdivision and will not be impacted by this**

development. The proposed swale and berm on the east side of the proposed building captures all runoff and Sub Basin C's drainage pattern will match existing conditions.

5. Based on the landscaping plan provided it appears that the ultimate buildout anticipates additional connected impervious area. Please confirm that flows within those areas will be contained by their own storm sewer system. If this is not the case, please ensure that the drainage plan adequately depicts the full extents of the basins anticipated to be received by this infrastructure in the ultimate condition and that all infrastructure is adequately sized to accommodate said flows. **The future development plan is now shown on the drainage area map. Sub Basin A is designed to accommodate the future development. Sub Basin OS-1 is proposed to drain through the rip rap to the existing inlet behind the propose building. The final buildout will reroute this Sub Basin OS-1 to storm sewer via future curb and gutter.**
6. Provide highlighted reference sheets from the master report within the appendix for any information referenced within the narrative. **Sheets from the master report are now included in the appendix.**

Thank you for your time and please contact me should you have any questions at 406.922.7128.

Sincerely,

Ian Graham, PE
Civil Engineer
iangraham@cushingterrell.com